

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

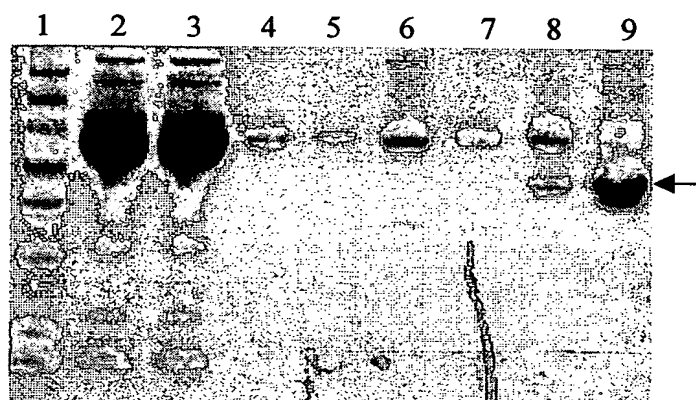
Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

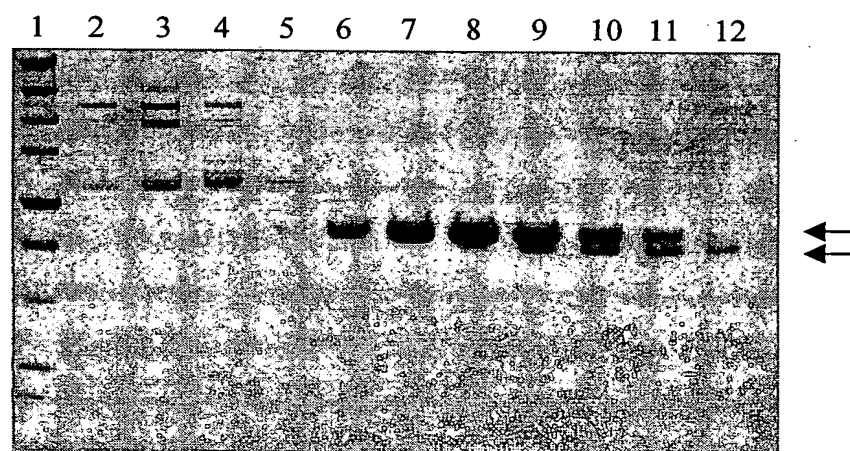
**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

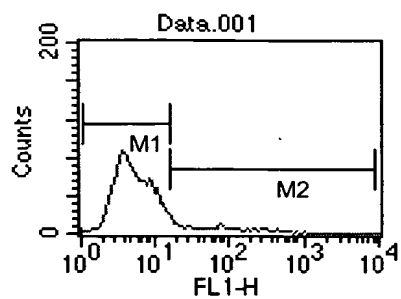
**FIG. 1**



**FIG. 2**



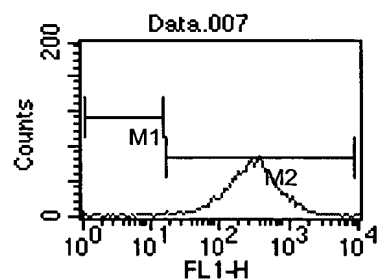
**FIG. 3A**



File: Data.001  
Sample ID: CHO  
Acquisition Date: 06-May-02

Marker	% Total	Geo Mean
All	100.00	5.90
M1	92.96	5.01
M2	6.63	56.16

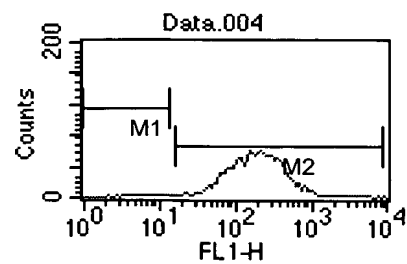
**FIG. 3B**



File: Data.007  
Sample ID: TF34  
Acquisition Date: 06-May-02

Marker	% Total	Geo Mean
All	100.00	262.38
M1	0.42	8.16
M2	99.44	266.56

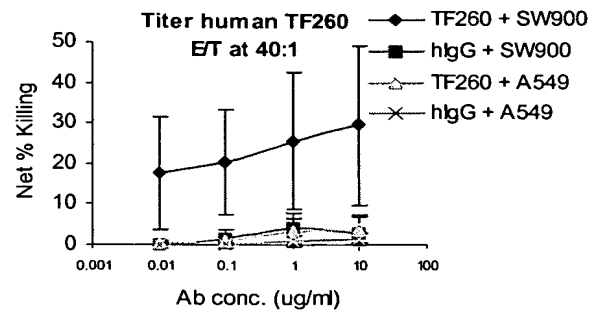
**FIG. 3C**



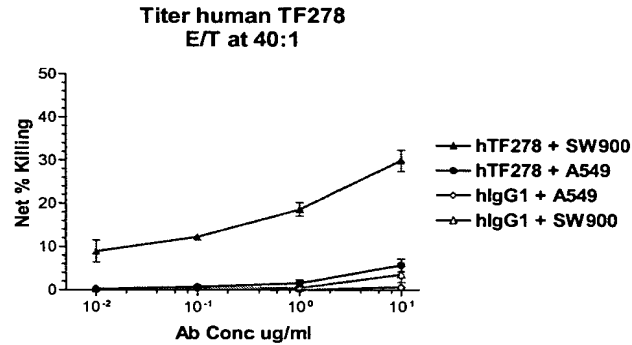
File: Data.004  
Sample ID: TF48  
Acquisition Date: 06-May-02

Marker	% Total	Geo Mean
All	100.00	167.64
M1	0.99	7.54
M2	98.87	173.51

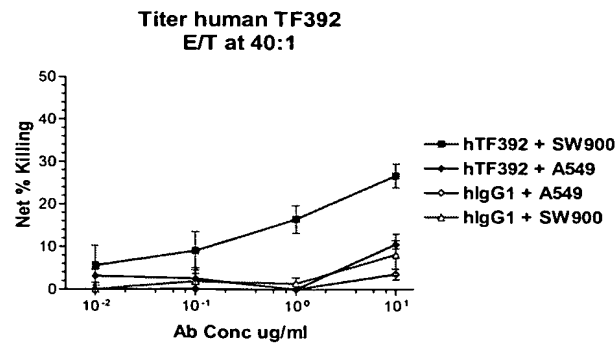
**FIG. 4A**



**FIG. 4B**



**FIG. 4C**



**FIG. 5**

ATG GAG ACC CCT GCC TGG CCC CGG GTC CCG CGC CCC GAG  
M E T P A W P R V P R P E  
ACC GCC GTC GCT CGG ACG CTC CTG CTC GGC TGG GTC TTC  
T A V A R T L L L G W V F  
GCC CAG GTG GCC GGC GCT TCA GGC ACT ACA AAT ACT GTG  
A Q V A G A S G T T N T V  
GCA GCA TAT AAT TTA ACT TGG AAA TCA ACT AAT TTC AAG  
A A Y N L T W K S T N F K  
ACA ATT TTG GAG TGG GAA CCC AAA CCC GTC AAT CAA GTC  
T I L E W E P K P V N Q V  
TAC ACT GTT CAA ATA AGC ACT AAG TCA GGA GAT TGG AAA  
Y T V Q I S T K S G D W K  
AGC AAA TGC TTT TAC ACA ACA GAC ACA GAG TGT GAC CTC  
S K C F Y T T D T E C D L  
ACC GAC GAG ATT GTG AAG GAT GTG AAG CAG ACG TAC TTG  
T D E I V K D V K Q T Y L  
GCA CGG GTC TTC TCC TAC CCG GCA GGG AAT GTG GAG AGC  
A R V F S Y P A G N V E S  
ACC GGT TCT GCT GGG GAG CCT CTG TAT GAG AAC TCC CCA  
T G S A G E P L Y E N S P  
GAG TTC ACA CCT TAC CTG GAG ACA AAC CTC GGA CAG CCA  
E F T P Y L E T N L G Q P  
ACA ATT CAG AGT TTT GAA CAG GTG GGA ACA AAA GTG AAT  
T I Q S F E Q V G T K V N  
GTG ACC GTA GAA GAT GAA CGG ACT TTA GTC AGA AGG AAC  
V T V E D E R T L V R R N  
AAC ACT TTC CTA AGC CTC CGG GAT GTT TTT GGC AAG GAC  
N T F L S L R D V F G K D  
TTA ATT TAT ACA CTT TAT TAT TGG AAA TCT TCA AGT TCA  
L I Y T L Y Y W K S S S S  
GGA AAG AAA ACA GCC AAA ACA AAC ACT AAT GAG TTT TTG  
G K K T A K T N T N E F L  
ATT GAT GTG GAT AAA GGA GAA AAC TAC TGT TTC AGT GTT  
I D V D K G E N Y C F S V  
CAA GCA GTG ATT CCC TCC CGA ACA GTT AAC CGG AAG AGT  
Q A V I P S R T V N R K S  
ACA GAC AGC CCG GTA GAG TGT ATG GGC CAG GAG AAA GGG  
T D S P V E C M G Q E K G  
GAA TTC AGA GAA ATA TTC TAC ATC ATT GGA GCT GTG GTA  
E F R E I F Y I I G A V V  
TTT GTG GTC ATC ATC CTT GTC ATC ATC CTG GCT ATA TCT  
F V V I I L V I I L A I S  
CTA CAC AAG TGT AGA AAG GCA GGA GTG GGG CAG AGC TGG  
L H K C R K A G V G Q S W  
AAG GAG AAC TCC CCA CTG AAT GTT TCA AGA GGA TCC CAC  
K E N S P L N V S R G S H  
CAT CAC CAT CAC CAT TAA  
H H H H H

**FIG. 6**

ATG GAG ACC CCT GCC TGG CCC CGG GTC CCG CGC CCC GAG  
M E T P A W P R V P R P E  
ACC GCC GTC GCT CGG ACG CTC CTG CTC GGC TGG GTC TTC  
T A V A R T L L L G W V F  
GCC CAG GTG GCC GGC GCT TCA GGC ACT ACA AAT ACT GTG  
A Q V A G A S G T T N T V  
GCA GCA TAT AAT TTA ACT TGG AAA TCA ACT AAT TTC AAG  
A A Y N L T W K S T N F K  
ACA ATT TTG GAG TGG GAA CCC AAA CCC GTC AAT CAA GTC  
T I L E W E P K P V N Q V  
TAC ACT GTT CAA ATA AGC ACT AAG TCA GGA GAT TGG AAA  
Y T V Q I S T K S G D W K  
AGC AAA TGC TTT TAC ACA ACA GAC ACA GAG TGT GAC CTC  
S K C F Y T T D T E C D L  
ACC GAC GAG ATT GTG AAG GAT GTG AAG CAG ACG TAC TTG  
T D E I V K D V K Q T Y L  
GCA CGG GTC TTC TCC TAC CCG GCA GGG AAT GTG GAG AGC  
A R V F S Y P A G N V E S  
ACC GGT TCT GCT GGG GAG CCT CTG TAT GAG AAC TCC CCA  
T G S A G E P L Y E N S P  
GAG TTC ACA CCT TAC CTG GAG ACA AAC CTC GGA CAG CCA  
E F T P Y L E T N L G Q P  
ACA ATT CAG AGT TTT GAA CAG GTG GGA ACA AAA GTG AAT  
T I Q S F E Q V G T K V N  
GTG ACC GTA GAA GAT GAA CGG ACT TTA GTC AGA AGG AAC  
V T V E D E R T L V R R N  
AAC ACT TTC CTA AGC CTC CGG GAT GTT TTT GGC AAG GAC  
N T F L S L R D V F G K D  
TTA ATT TAT ACA CTT TAT TAT TGG AAA TCT TCA AGT TCA  
L I Y T L Y Y W K S S S S  
GGA AAG AAA ACA GCC AAA ACA AAC ACT AAT GAG TTT TTG  
G K K T A K T N T N E F L  
ATT GAT GTG GAT AAA GGA GAA AAC TAC TGT TTC AGT GTT  
I D V D K G E N Y C F S V  
CAA GCA GTG ATT CCC TCC CGA ACA GTT AAC CGG AAG AGT  
Q A V I P S R T V N R K S  
ACA GAC AGC CCG GTA GAG TGT ATG GGC CAG GAG AAA GGG  
T D S P V E C M G Q E K G  
GAA TTC AGA GAA AGA GGA TCC CAC CAT CAC CAT CAC CAT TAA  
E F R E R G S H H H H H H

**FIG. 7A**

CAG GTG CAG CTG AAG CAG TCT GGA GCT GAG CTG ATG AAG  
Q V Q L K Q S G A E L M K  
CCT GGG GCC TCA GTG AAG ATA TCC TGC AAG GCT ACT GGC  
P G A S V K I S C K A T G  
TAC ACA TTC AGT AGC TAC TGG ATA GAG TGG GTA AAG CAG  
Y T F S S Y W I E W V K Q  
AGG CCT GGA CAT GGC CTT GAG TGG ATT GGA GAG ATT TTA  
R P G H G L E W I G E I L  
CCT GGA AGT GGT AGT ACT AAC TAC AAT GAG AAG TTC AAG  
P G S G S T N Y N E K F K  
GGC AAG GCC ACA TTC ACT GCA GAT ACA TCC TCC AAC ACA  
G K A T F T A D T S S N T  
GCC TAC ATG CAA CTC AGC AGC CTG ACA TCT GAG GAC TCT  
A Y M Q L S S L T S E D S  
GCC GTC TAT TAC TGT GCA AGA GAG GAT AGG TAC GAC GGT  
A V Y Y C A R E D R Y D G  
GAC TAC TGG GGC CAA GGC ACC ACT CTC ACA GTC TCG AG  
D Y W G Q G T T L T V S

**FIG. 7B**

CAG GCT GTT GTG ACT CAG GAA TCT GCA CTC ACC ACA TCA  
Q A V V T Q E S A L T T S  
CCT GGT GAA ACA GTC ACA CTC ACT TGT CGC TCA AGT ACT  
P G E T V T L T C R S S T  
GGG GCT GTT ACA ACT AGT AAC TAT GCC AAC TGG GTC CAA  
G A V T T S N Y A N W V Q  
GAA AAA CCA GAT CAT TTA TTC ACT GGT CTA ATA GGT GGT  
E K P D H L F T G L I G G  
ACC AAC AAC CGA GCT CCA GGT GTT CCT GCC AGA TTC TCA  
T N N R A P G V P A R F S  
GGC TCC CTG ATT GGA GAC AAG GCT GCC CTC ACC ATC ACA  
G S L I G D K A A L T I T  
GGG GCA CAG ACT GAG GAT GAG GCA ATA TAT TTC TGT GCT  
G A Q T E D E A I Y F C A  
CTA TGG TAC AGC AAC CAC TGG GTG TTC GGT GGA GGA ACC  
L W Y S N H W V F G G G T  
AAA CTG ACT GTC CTA GGT CAG CCC C  
K L T V L G Q P



**FIG. 8A**

CAG GTG CAG CTG AAG CAG TCT GGA CCT GAG CTG GAG AAG  
Q V Q L K Q S G P E L E K  
CCT GGC GCT TCA GTG AAG ATA TCC TGC AAG GCT TCT GGT  
P G A S V K I S C K A S G  
TAC TCA TTC ACT GGC TAC AAC ATG AAC TGG GTG AAG CAG  
Y S F T G Y N M N W V K Q  
AGC AAT GGA AAG AGC CTT GAG TGG ATT GGA AAT ATT GAT  
S N G K S L E W I G N I D  
CCT TAC TAT GGT GGT ACT AGC TAC AAC CAG AAG TTC AAG  
P Y Y G G T S Y N Q K F K  
GGC AAG GCC ACA TTG ACT GTA GAC AAA TCC TCC AAC ACA  
G K A T L T V D K S S N T  
GCC TAC ATG CAC CTC AAG AGC CTG ACA TCT GAG GAC TCT  
A Y M H L K S L T S E D S  
GCA GTC TAT TAC TGT GCA AGA GAT AGT AGC TCC TGG TTT  
A V Y Y C A R D S S S W F  
GCT TAC TGG GGC CAA GGG ACT CTG GTC ACT GTC TCT GCA  
A Y W G Q G T L V T V S A

**FIG. 8B**

GAC ATC CAG CTG ACT CAG TCT CCA GCC TCC CTA TCT GCA  
D I Q L T Q S P A S L S A  
TCT GTG GGA GAA ACT GTC ACC ATC ACA TGT CGA GCA AGT  
S V G E T V T I T C R A S  
GGG AAT ATT CAC AAT TAT TTA GCA TGG TAT CAG CAG AAA  
G N I H N Y L A W Y Q Q K  
CAG GGA AAA TCT CCT CAG CTC CTG GTC TAT AAT GCA AAA  
Q G K S P Q L L V Y N A K  
ACC TTA GCA GAT GGT GTG CCA TCA AGG TTC AGT GGC AGT  
T L A D G V P S R F S G S  
GGA TCA GGA ACA CAA TAT TCT CTC AAG ATC AAC AGC CTG  
G S G T Q Y S L K I N S L  
CAG CCT GAA GAT TTT GGG AGT TAT TAC TGT CAA CAT TTT  
Q P E D F G S Y Y C Q H F  
TGG ATT ACT CCG TGG ACG TTC GGT GGA GGC ACC AAG CTG  
W I T P W T F G G G T K L  
GAG ATC TAA CGG A  
E I K R

**FIG. 9A**

GAG GTC CAG CTG CAG CAA TCT GGA GCT GAG CTG ATG AAG  
E V Q L Q Q S G A E L M K  
CCT GGG GCC TCA GTG AAG ATA TCC TGC AAG GCT ACT GGC  
P G A S V K I S C K A T G  
TAC ACA TTC AGT AGC TAC TGG ATA GAG TGG GTA AAG CAG  
Y T F S S Y W I E W V K Q  
AGG CCT GGA CAT GGC CTT GAG TGG ATT GGA GAG ATT TTA  
R P G H G L E W I G E I L  
CCT GGA AGT GCT AGT ACT AAG TAC AAT GAG AAG TTC AAG  
P G S A S T K Y N E K F K  
GGC AAG GCC ACA TTC ACT GCA GAT ACA TCC TCC AAC ACA  
G K A T F T A D T S S N T  
GCC TAC ATG CAA CTC AGC AGC CTG ACA TCT GAG GAC TCT  
A Y M Q L S S L T S E D S  
GCC GTC TAT TAC TGT GCA AGA GAT TAT TAC TAC GGT AGT  
A V Y Y C A R D Y Y Y G S  
AGC TAC GGG TTT GCT TAC TGG GGC CAA GGG ACT CTG GTC  
S Y G F A Y W G Q G T L V  
ACT GTC TCG AGT  
T V S S

**FIG. 9B**

CAG GCT GTT GTG ACT CAG GAA TCT GCA CTC ACC ACA TCA  
Q A V V T Q E S A L T T S  
CCT GGT GAA ACA GTC ACA CTC ACT TGT CGC TCA AGT ACT  
P G E T V T L T C R S S T  
GGG GCT GTT ACA ACT AGT AAC TAT GCC AAC TGG GTC CAA  
G A V T T S N Y A N W V Q  
GAA AAA CCA GAT CAT TTA TTC ACT GGC CTA ATA GGT GGT  
E K P D H L F T G L I G G  
ACC AAC AAC CGA GGT CCA GGT GTT CCT GCC AGA TTC TCA  
T N N R G P G V P A R F S  
GGC TCC CTG ATT GGA GAC AAG GCT GCC CTC ACC ATC ACA  
G S L I G D K A A L T I T  
GGG GCA CAG ACT GAG GAT GAG GCA GTA TAT TTC TGT GCT  
G A Q T E D E A V Y F C A  
CTA TGG TAC AGC AAC CAT TGG GTG TTC GGT GGA GGA ACC  
L W Y S N H W V F G G G T  
AAA CTG ACT GTC CTA GGT  
K L T V L G

FIG. 10A

CAG GTC CAA CTG CAG CAG CCT GGG GCT GAG CTT GTG AAG  
Q V Q L Q Q P G A E L V K

CCT GGG GCT TCA GTG AAG CTG TCC TGC AAG ACT TCT GGC  
P G A S V K L S C K T S G

TAC ACC TTC ACC AGC TAC TGG ATG CAC TGG GTG AAG CAG  
Y T F T S Y W M H W V K Q

AGG CCT GGA CAA GGC CTT GAG TGG ATC GGA GAG ATT GAT  
R P G Q G L E W I G E I D

CCT TCT GAT AGT TAT ACT AAC TAC AAT CAA AAG TTC AAG  
P S D S Y T N Y N Q K F K

GGC AAG GCC ACA TTG ACT GTA GAC AAA TCC TCC AGC ACA  
G K A T L T V D K S S S T

GCC TAC ATG CAG CTC AGC AGC CTG ACA TCT GAG GAC TCT  
A Y M Q L S S L T S E D S

GCG GTC TAT TAC TGT ACC TAC TAT GTT AAC TAC TAT GCT  
A V Y Y C T Y Y V N Y Y A

ATG GAC TAC TGG GGT CAA GGA ACC TCA GTC ACC GTC TCC  
M D Y W G Q G T S V T V S

TCA

S

**FIG. 10B**

CAA ATT GTT CTC ACC CAG TCT CCA GCA ATC ATG TCT GCA  
Q I V L T Q S P A I M S A  
TCT CTA GGG GAG GAG ATC ACC CTA ACC TGC AGT GCC AGC  
S L G E E I T L T C S A S  
TCG AGT GTA AGT TAC ATG CAC TGG TAC CAG CAG AAG TCA  
S S V S Y M H W Y Q Q K S  
GGC ACT TCT CCC AAA CTC TTG ATT TAT AGC ACA TCC AAC  
G T S P K L L I Y S T S N  
CTG GCT TCT GGA GTC CCT TCT CGC TTC AGT GGC AGT GGG  
L A S G V P S R F S G S G  
TCT GGG ACC TTT TAT TCT CTC ACA ATC AGC AGT GTG GAG  
S G T F Y S L T I S S V E  
GCT GAA GAT GCT GCC GAT TAT TAC TGC CAT CAG TGG AGT  
A E D A A D Y Y C H Q W S  
AGT TAT CCA TAC ACG TTC GGA GGG GGG ACC AAG CTG GAA  
S Y P Y T F G G G T K L E  
ATA AAA  
I K

[illegible]

FIG. 12A

GAT	GTG	AAG	CTT	CAG	GAG	TCA	GGA	CCT	GAC	CTG	GTG	AAA
D	V	K	L	Q	E	S	G	P	D	L	V	K
CCT	TCT	CAG	TCA	CTT	TCA	CTC	ACC	TGC	ACT	GTC	ACT	GGC
P	S	Q	S	L	S	L	T	C	T	V	T	G
TAC	TCC	ATC	ACC	AGT	GGT	TAT	AGC	TGG	CAC	TGG	ATC	CGG
Y	S	I	T	<u>S</u>	G	Y	S	W	H	W	I	R
CAG	TTT	CCA	GGA	AAC	AAA	CTG	GAA	TGG	ATG	GGC	TAC	ATA
Q	F	P	G	N	K	L	E	W	M	G	<u>Y</u>	<u>I</u>
CAC	TAC	AGT	GGT	AGC	ACT	AAG	TAC	AAC	CCA	TCT	CTC	AAA
H	Y	S	G	S	T	K	Y	N	P	S	L	K
AGT	CGA	ATC	TCT	ATC	ACT	CGA	GAC	ACA	TCC	AAG	AAC	CAG
<u>S</u>	R	I	S	I	T	R	D	T	S	K	N	Q
TTC	TTC	CTG	CAG	TTG	AAT	TCT	GTG	ACT	ACT	GAG	GAC	ACA
F	F	L	Q	L	N	S	V	T	T	E	D	T
GCC	ACA	TAT	TAC	TGT	GCA	AGA	CTC	TGG	AGT	TGG	TAC	TTC
A	T	Y	Y	C	A	R	<u>L</u>	W	S	W	Y	F
GAT	GTC	TGG	GGC	GCA	GGG	ACC	ACG	GTC	ACC	GTC	TCC	TCA
<u>D</u>	<u>V</u>	W	G	A	G	T	T	V	T	V	S	S



FIG. 12B

AAC	ATT	ATG	ATG	ACA	CAG	TCG	CCA	TCA	TCT	CTG	GCT	GTG
N	I	M	M	T	Q	S	P	S	S	L	A	V
TCT	GCA	GGA	GAA	AAG	GTC	ACT	ATG	AGC	TGT	AAG	TCC	AGT
S	A	G	E	K	V	T	M	S	C	<u>K</u>	<u>S</u>	<u>S</u>
CAA	AGT	GTT	TTA	TAC	AGT	TCA	AAT	CAG	AAG	AAC	TAC	TTG
<u>Q</u>	<u>S</u>	<u>V</u>	<u>L</u>	<u>Y</u>	<u>S</u>	<u>S</u>	<u>N</u>	<u>Q</u>	<u>K</u>	<u>N</u>	<u>Y</u>	<u>L</u>
GCC	TGG	TAC	CAG	CAG	AAA	CCA	GGG	CAG	TCT	CCT	AAA	CTG
<u>A</u>	W	Y	Q	Q	K	P	G	Q	S	P	K	L
CTG	ATC	TAC	TGG	GCA	TCC	ACT	AGG	GAA	TCT	GGT	GTC	CCT
L	I	Y	<u>W</u>	<u>A</u>	<u>S</u>	<u>T</u>	<u>R</u>	<u>E</u>	<u>S</u>	G	V	P
GAT	CGC	TTC	ACA	GGC	AGT	GGA	TCT	GGG	ACA	GAT	TTT	ACT
D	R	F	T	G	S	G	S	G	T	D	F	T
CTT	ACC	ATC	AGC	AGT	GTA	CAA	GCT	GAA	GAC	CTG	GCA	GTT
L	T	I	S	S	V	Q	A	E	D	L	A	V
TAT	TAC	TGT	CAT	CAA	TAC	CTC	TCC	TCG	TAC	ACG	TTC	GGA
Y	Y	C	<u>H</u>	<u>Q</u>	<u>Y</u>	<u>L</u>	<u>S</u>	<u>S</u>	<u>Y</u>	<u>T</u>	F	G
GGG	GGG	ACC	AAG	CTG	GAA	ATA	AAA					
G	G	T	K	L	E	I	K					